Report From the Meeting of
CITEL PCC II WG-1 (WRC-07)
19-22 July, 2004

The third meeting of the CITEL Permanent Consultative Committee II: Radiocommunications including Broadcasting, Working Group for the Preparation for WRC-07 was held in Orlando Florida on July 19-22, 2004. The decisions of the meeting on the considered WRC-07 agenda items are provided below.

Agenda Item 1.2 - *consideration of allocations and regulatory issues related to the Earth exploration-satellite (passive) service, space research (passive) service and the meteorological satellite service in accordance with Resolutions 742 (WRC-03) and 746 (WRC-03)*.

Issue 1: Sharing between the passive services and the fixed and mobile services in the 36-37 GHz band (Res. 742) - With regard to this issue Canada is considering whether is may be feasible to provide protection of passive services (EESS and SRS) in the band 36-37 GHz without placing undue constraints on the fixed and mobile services.

Issue 2: Sharing between the passive services and the fixed and mobile services in the 10.6-10.68 GHz band (Res. 746) - With regard to this issue Canada indicated that sharing studies need to be performed to identify the requirement for additional constraints and their impact on both services

Issue 3: Extension of the current 18.1-18.3 GHz geostationary meteorological satellites allocation in the space-to-Earth direction to 300 MHz of contiguous spectrum in the 18.0-18.4 GHz band (Res. 746) – With regard to this issue Canada reported that it is at the stage of consultation with the various Canadian users of the band. However, it is recognized that, to protect the fixed and mobile services, any expansion of the MetSat service (s-E) allocation beyond the band 18.1-18.3 GHz for geostationary applications will be required to conform to the existing pfd limits given in Table **21-4**. The United States provided the following views:

1. The United States supports ongoing ITU-R studies on this issue in both the 18.0-18.1 GHz and the 18.3-18.4 GHz bands.
2. The United States is not in favor of an extension of the MetSat allocation into the 18.3-18.4 GHz band in Region 2 if it necessitates imposition of additional constraints on the FSS in this band.
3. In order to meet the bandwidth requirements of the next generation of geostationary MetSats, expansion of the existing allocation in 18.1-18.3 GHz in Region 2 should consider the band 18.0-18.3 GHz, due to the likelihood of sharing difficulties between HDFSS GSO systems and MetSats in 18.3-18.4 GHz.

Agenda Item 1.3 - *in accordance with Resolution 747 (WRC-03), consider upgrading the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz, and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in*

the band 9 500-9 800 without placing undue constraint on the services to which the bands are allocated;

Issues: No preliminary views were put forward at the July 2004 meeting of PCCII. However, U.S. worked with Canada on some of the wording to the text Canada provided identifying issues related to this agenda item and essentially endorsing the text as U.S. outlook on the issues. The following text shows the agreed text by the two administrations,

The Canadian administration has identified the following points as issues with respect to the upgrade of the radiolocation service:

- Protection of existing primary aeronautical radionavigation and radionavigation service in the 9 000-9 200 MHz and 9 300-9 500 MHz bands respectively;
- Study and conduct test measurements to determine the appropriate protection criteria for aeronautical and maritime radionavigation radars in the 9 GHz band;
- Studies on radionavigation radars sharing with radiolocation radars in the 9 GHz band.

The Canadian administration has identified the following points as issues with respect to the extension of the Earth exploration-satellite service:

1. Protection of the operation of existing primary services allocated to the band;
2. Feasibility of compatible operations between systems of the radiolocation and radionavigation services, and spaceborne radars of the Earth exploration-satellite and space research services in the band 9 300-9 500 MHz such that EESS (active) and SR (active) services would not place any undue constraints on the radiolocation and radionavigation services.

Agenda Item 1.4 - *frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000 taking into account the results of ITU-R studies in accordance with Resolution* ***228 (Rev.WRC-03)***

With regard to this agenda item, the U.S. indicated that it supports conducting, and is participating, in the studies in WP8F to ensure that the appropriate methodology for estimating spectrum is employed; that anticipated services are reasonable and realistic; and that the estimate of spectrum needs is based on these reasonable methodologies/services. The U.S. also recognizes the special needs of developing areas of the world. In determining the need for identifying additional spectrum, already identified spectrum and the need to protect existing services must be taken into account. As studies are conducted in WP8F, the U.S. will determine if it will support the identification of any additional bands for the deployment of these systems. (June 2004).

Agenda Item 1.5 - *spectrum requirements and possible additional spectrum allocations for aeronautical telecommand and high bit-rate aeronautical telemetry.*
With regard to this agenda item both Canada and United States expressed a vies in support of further studies in order to determine how best to satisfy this Agenda Item while recognizing protection of incumbent services. Upon completion of these studies,

Canada and U.S. will be in a position to make specific proposals. The meeting identified the following issues to be considered under this agenda item:

1 Consider the need for definition of wideband aeronautical telemetry and associated telecommand.
2 Identify the spectrum requirements through ITU-R studies for use of aeronautical telemetry and telecommand systems above 3 GHz, considering bands already allocated to the mobile service.
3 Protection of existing services in the 3-30 GHz range.

Agenda Item 1.6 - *additional allocations for the aeronautical mobile (R) service in parts of the bands between 108 MHz and 6 GHz, in accordance with Resolution 414 (WRC-03) and, to study current satellite frequency allocations, that will support the modernization of civil aviation telecommunication systems, taking into account Resolution 415 (WRC-03).*

With regard to Resolution 414 (WRC-03):

Canada expressed the following views:

1. Identify applications and spectrum requirements for AM(R)S to determine if new spectrum allocations are required
2. Review existing bands currently allocated to aeronautical services between 108 MHz and 6 GHz, ie; ARNS, Radiolocation for suitability to AM(R)S use.
3. If necessary, study compatibility of AM(R)S use with existing services in bands not allocated to aeronautical services.
4. Coexistence of MSS feeder links with AM(R)S in the band 5 091-5 150 MHz.
5. Potential revisions to current regulatory provisions to permit AM(R)S use.
6. Protection of non-aeronautical services (example MSS Feeder Links 5 091 – 5 150 MHz) operating as co-primary or secondary in bands allocated to ARNS.

United States expressed the following views:

1. Current aviation communication bands are severely congested. In addition, recent experience has shown that evolving technology for navigation and surveillance may necessitate allocations that are more encompassing than simply aeronautical radionavigation service (ARNS). As a result, the United States anticipates supporting the addition of AM(R)S allocations in some frequency bands depending on the results of ITU-R studies. Toward that end, the United States will investigate, as a first step, the bands currently available for use by aeronautical systems in the frequency range between 108 MHz and 6 GHz. The United States also will seek to maintain compatibility with services in adjacent bands. In particular, the United States is of the view that any allocation changes in the 108-117.975 MHz band must be compatible with terrestrial broadcasting systems and place no additional constraints on the broadcasting service in the 87-108 MHz band.
2. The United States will seek to further investigate, in case the first step above would not lead to satisfactory results, also the frequency bands currently not available for use by aeronautical systems, subject to not constraining the existing and planned use of such bands, taking account of existing use and future requirements in these bands;
3. The United States will seek to investigate how to accommodate the requirements for aeronautical systems in the band 5 091-5 150 MHz, including the possibility of fixed service links limited to aeronautical applications at airports. In this regard the United States will

seek to ensure that the operations of the existing FSS consistent with 5.444A are taken into account.

With regard to Resolution 415 (WRC-03):
Canada expressed the following views:
1. Study the current satellite frequency allocations that could meet the aeronautical requirements to support the modernization of civil aviation telecommunication systems, especially those in developing countries.
2. Study radio frequencies that could be used to support both ICAO communication navigation surveillance and air traffic management (CNS/ATM) systems and other non-aeronautical telecommunication services.
3. Noting that Resolution **34 (WRC-95)** urges the allocation of frequency bands to the most broadly defined services with a view to providing maximum flexibility in spectrum use, study the allocations and current use of the radio spectrum.
4. Possible impact on current usage of satellite frequency allocations by the introduction of aeronautical requirements, especially when a single spacecraft is used to provide a range of different services.
5. Compatibility of global commercial satellite services to support aeronautical telecommunications infrastructure.

United States expressed the following views:
1. The United States supports the use of the Global Positioning System (GPS) as a constituent element of the GNSS.
2. That existing Fixed Satellite Service (FSS) spacecraft and appropriate earth stations can be used to create, augment or enhance infrastructure to support civil aviation telecommunications services, including non-safety related ICAO CNS/ATM applications.
3. The use of satellite-based facilities in connection with civil aviation applications will contribute to the overall improvement of the aviation communications infrastructure in developing countries and remote areas while at the same time could allow ready access to Internet based services for other purposes. However, since these applications are already consistent with existing satellite frequency allocations and can be supported by existing or planned satellite networks, no action from WRC-07 is required in this respect.
4. That the extension of broadband digital access to aeronautical platforms is a necessary step in the modernization of civil aviation telecommunications systems and that this extension can be facilitated through the Aeronautical Mobile Satellite Service (AMSS) operating in the 14/11/12 GHz bands.. There is currently no AMSS downlink allocation and downlink signals operate under RR 4.4 in the 11/12 GHz band. The matching of the secondary AMSS uplink in the 14 GHz band with a secondary downlink allocation in the 11/12 GHz band would aid in the acceptance and standardization of these non-safety applications for aviation use.

Agenda Item 1.7 - *sharing between the mobile-satellite service and the space research service (passive) in the band 1 668-1 668.4 MHz, and between the mobile-satellite service and the mobile service in the band 1 668.4-1 675 MHz*. With regard to this agenda item, Canada indicated that it will participate in the sharing studies conducted by WP 8D to ensure that no undue constraints are imposed on existing services in the band.

Agenda Item 1.8 - *studies on technical sharing and regulatory provisions for the application of high altitude platform stations operating in the bands 27.5-28.35 GHz and 31-31.3 GHz in response to Resolution 145 (WRC-03), and for high altitude platform stations operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz in response to Resolution 122 (rev. WRC-03).*

Resolution 122 (Rev. WRC-03)

Canada will support the protection of other services allocated in this band from FS systems implementing HAPS. 1. The U.S. believes, as it did at WRC-03, that the question of the feasibility of co-frequency operation between HAPS in the FS and the FSS at 47.2-47.5 GHz and 47.9-48.2 GHz has been answered in the affirmative. With that, there no longer is any need for Resolution 122, the restrictions it imposes on FSS notices in Regions 1 and 3, or on the extraordinary freedom from implementation deadlines it extends to FS HAPS notices in the 47.2-47.5 GHz and 47.9-48.2 GHz bands. Thus, Resolution 122 should be suppressed. The U.S. will participate in studies on the power limitations to be applied to HAPS ground stations to protect space station receivers in the 47.2-47.5 GHz and 47.9-48.2 GHz bands.

Resolution 145 (WRC-03)

Canada will support the protection of other applications of the FS, specifically LMCS, and other services allocated in this band, such as the FSS, from fixed service systems implementing HAPS. The discussion for HAPS should remain in the band 27.5-28.35 GHz. The United States is of the view that:

1. HAPS use of the 31-31.3 GHz allocation must ensure protection from interference to the passive services operating in 31.3-31.8 GHz
2. The existing HAPS ground station power density limits described in No. 5.543A adequately protect passive satellite services operating in 31.3-31.8 GHz, yet provide sufficient power for operation of ground-to-HAPS links. The United States anticipates supporting no change to the existing No. 5.543A. The U.S. will participate in studies on the power limitations to be applied to HAPS ground stations to protect space station receivers.
3. The U.S. also supports the continued studies called for in Resolution **145 (WRC-03)** that will demonstrate whether HAPS can operate successfully on a non-interference/non-protected basis in the 28 GHz and 31 GHz bands, and the inclusion of the results of these studies, as appropriate, in ITU-R Recommendations. However, recognizing the regulatory status of this service in these bands, the United States does not support the specification of interference or sharing criteria for HAPS in ITU Radio Regulations for these bands. (June 2004)

Agenda Item 1.9 - *technical, operational and regulatory provisions applicable to the use of the band 2 500-2 690 MHz by space services in order to facilitate sharing with current and future terrestrial services without placing undue constraint on the services to which the band is allocated*

With regard to this agenda item, Brazil indicated that in its view the technical, operational and regulatory provisions applicable to the use of the band 2 500-2 690 MHz by space services shall address full protection of current and future terrestrial services.

Agenda Item 1.10 - *review of the regulatory procedures and associated technical criteria of Appendix 30B, without impact on existing allotments or assignments, Resolution 146 (WRC-03).*

The U.S. and Canada support continued improvements to the regulatory procedures and associated technical criteria of Appendix 30B and are committed to working through the study groups and with other administrations toward that end with the intent of finding a way to make the band more useable without impact to existing users and minimize the regulatory burden to use the frequencies in the Plan. The U.S. is also of the view that:

1. In considering changes to the technical and procedural aspects of Appendix 30B, the U.S. does not advocate any action on the allotments, the existing systems, or the assignments in the List of Appendix 30B.
2. The U.S. considers that modified technical criteria should be based on realistic system parameters that reflect digital communications technology in use today and foreseen for the near future.
3. Further, the U.S. considers that sufficient flexibility should be built into the procedures in Appendix 30B to permit reasonable accommodation of new technologies without requiring additional revisions to Appendix 30B post WRC-07.
4. The U.S. intends to focus its efforts on improvements to the regulatory procedures and associated technical criteria for the Ku-band portion of Appendix 30B, as it considers this offers the greatest opportunity for improvements that can yield cost-effective access to satellite broadband services. The U.S. considers that the bands subject to Appendix 30B should be among those considered for the global broadband satellite systems serving Internet applications addressed under agenda item 1.19. (July 2004).

Agenda Item 1.11 - *sharing criteria and regulatory provisions for the protection of terrestrial services, in particular terrestrial television broadcasting services, in the 620-790 MHz band from GSO BSS networks and non-GSO BSS satellite networks or systems.*

In Canada, the 620-790 MHz band is used for the provision of terrestrial analog and digital television broadcasting services. Also as per FN 5.293, parts of this band will be used to provide special mobile services (i.e. for the. provision of public safety applications) and may, in the future, be used to provide other fixed and mobile services. Canada is not aware of any domestic interest in implementing BSS systems in this band. Consequently Canada plans to actively participate in the ITU-R studies requested in Resolution **545 (WRC-03)** with the main focus placed on ensuring adequate protection of the terrestrial services. Additionally, given the ubiquitous nature of the broadcast and mobile services, any constraints placed on the terrestrial services to protect the BSS service would not be acceptable to Canada.

Agenda Item 1.12 - *Coordination and notification procedures for satellite networks" in accordance with Resolution **86 (WRC-03).***

The United States and Canada support the continued modification, including simplification, of the Radio Regulations procedures that would facilitate their understanding and minimize the need for associated Rules of Procedure. Both administrations are committed to working through the study groups and with other administrations toward that end. At this preliminary stage, it is the view of both administrations that the work of the ITU staff could potentially be made more efficient and effective through modification of Articles 9 and 11 of the Radio Regulations. However, it is important to ensure that proposed modifications to rationalize and simplify Articles 9 and 11 do not alter the regulatory rights currently afforded to assignments of satellite network filings from the application of satellite coordination and notification procedures. Studies are required to determine which modifications, if any, would be appropriate.
Canada also indicated that it is interested and has actively participated in this the review of Appendix 4 data requirements in the ITU-R, Special Committee, CPM and WRC-03and will continue to take an active role in this matter. Furthermore, Canada supports the initiative to automate the examination of filings for compliance with the requirements of Article 5 but does not view automation initiatives as WRC matters. Canada also supports the coordination arc concept as currently reflected in the Radio Regulations. Canada plans to actively participate in the ITU-R activities in this area.

Agenda Item 1.14 - *Operational procedures and requirements of the Global Maritime Distress and Safety System (GMDSS) and other related provisions of the Radio Regulations*
With regard to this agenda item, Canada expressed a view that sufficient experience has been gained from GMDSS, such that appropriate and/or necessary changes to the Radio Regulations can be considered at this Conference. In terms of new technologies in the VHF maritime mobile band, Canada will participate in the ITU-R studies on this issue.

The United States stated that it believes that the distress and safety communications, non-GMDSS, should be revised to accommodate interoperability with GMDSS. In particular, Chapter VII of the Radio Regulations should be revised. This interoperability is required to maintain Safety-of-Life at sea until the maritime community has fully transitioned to the GMDSS standard. In accordance with IMO recommendations, GMDSS ships continue to keep continuous guard on VHF channel 16 (156.8 MHz) with a view to maintaining communications between SOLAS and Non-SOLAS ships. The United States maintains that all vessels are encouraged to make use of the GMDSS as soon as possible. The IMO has authorized the discontinuance of a 2182 KHz guard for SOLAS vessels. The United States, in recognition of its continuing domestic requirements regarding non-SOLAS vessels outside of VHF range, will maintain a 2182 kHz guard for the foreseeable future.

With regard to the use of new technologies for the maritime mobile service in the band 156-174 MHz and the consequential revision of Appendix **18** to reflect new technologies, the United States supports and is implementing port and coastal systems in accordance with Recommendation ITU-R M.1371-1 for Automatic Identification System (AIS). The further introduction of digital systems into this band should be based on adopting suitably modified land mobile technology into a worldwide interoperable standard. Appendix **18** should also

be modified to reflect the current diminished demand for public correspondence coast stations.
ITU-R WP 8B plans to evaluate the future uses of the currently designated Public Correspondence VHF Channels for other maritime related use, in view of the worldwide decline of VHF public correspondence services.

Agenda Item 1.17 - *allocation to the FSS for feeder links for non-geostationary-satellite networks in the mobile-satellite service with service links below 1 GHz in the bands 1390-1392 MHz (Earth-to-space) and 1430-1432 MHz (space-to-Earth)*. With regard to this agenda item, Canada noted that this issue was extensively discussed at WRC-03. Canada's objective was and still is to protect the existing services in this and adjacent bands, and in particular the fixed and radiolocation services as they are heavily used in Canada. Canada will participate in studies on this issue to ensure that any adopted sharing criteria adequately protect the incumbent services.

Agenda Item 1.18 - *pfd limits in the band 17.7-19.7 GHz for satellite systems using highly inclined orbits.*
Canada and the United States support no change to the pfd limits in Table **21-4**, Article **21.** The current pfd limits are adequate to protect the terrestrial services from non-GSO FSS satellites in highly-elliptical orbits operating in the 17.7-19.3 GHz band. The United States also expressed the following views:

1. That Agenda Item 1.18 and its associated resolution, although ambiguously worded so as to encompass some circular-orbit non-GSO systems that meet the apogee altitude and orbital inclination criteria in *considering g)* of Resolution 141 (WRC-03), was intended to apply to highly-inclined (i.e., between 35º and 145º) non-circular-orbit non-GSO FSS satellite systems with orbital apogee altitudes greater than 18,000 km ***and orbital perigee altitudes that are less than the orbital apogee altitudes***. Consequently, there is no need to review the limits that apply to those non-GSO satellite systems using circular orbits, such as medium earth orbits (MEO) that satisfy both the apogee altitude criterion and the inclination criterion.
2. ITU-R studies on sharing between non-GSO systems in the 17.7-19.7 GHz band using HIOs and FS networks in the same band should continue. Studies will be improved by using realistic assumptions both for the relevant characteristics of the fixed-satellite service – including the number of active HEO/HIO satellites in view of a particular fixed service station – and for the relevant characteristics of fixed service systems.
3. Satellite networks using HIOs should continue to be considered as non-GSOs and have the same regulatory standing as other types of non-GSOs such as those in low and medium earth orbits. There is no need to modify the Radio Regulations in a way that categorizes HIO non-GSO operations separately from other non-GSO systems.

Agenda Item 1.19 - *spectrum requirements for global broadband satellite systems in order to identify possible global harmonized FSS frequency bands for the use of Internet applications, and consider the appropriate regulatory/technical provision*s.
The United States and Canada agreed on the following views:

1. There are many existing and planned systems in a number of different FSS frequency bands fully capable of providing broadband/Internet applications on a global basis.
2. The current Radio Regulations for access, coordination and notification of satellite networks fully accommodate the ability of FSS systems to provide Internet access.
3. The commercially available ground equipment suitable for broadband/Internet applications is frequency agile and is fully capable of operating with the existing and planned FSS satellite systems in the allocated frequency bands.
4. Considering that identification of specific FSS frequency bands for the use of Internet applications, will not improve or facilitate provision of these applications. No changes should be made to the Radio Regulations in connection with this agenda item.

Agenda Item 1.20 - *regulatory measures for the protection of the Earth exploration-satellite service (passive) from unwanted emissions of active services*.
With regard to this agenda item Canada expressed its intention to participate in the compatibility studies to be carried out by TG 1/9, paying particular attention to the Earth exploration satellite passive service and the active services bands of interest to Canada. Canada is of the view that the studies under this agenda item should be limited to the specific bands identified in the resolution.

Agenda item 1.21 - *compatibility between radio astronomy service and active space services*.
Canada and U.S. agreed that satisfactory studies in ITU-R TG 1/9 need to be completed before a determination is made regarding adding any of pairs contained in Resolution **740** to the Table in Resolution **739**. The studies must identify the appropriate threshold levels for consultation and the impact on the concerned active and passive radio services. CITEL administrations intend to participate in the compatibility studies to be carried out by ITU-R TG 1/9. Canda and U.S. also agreed that the scope of Agenda Item 1.21 is limited to consideration of the band pairs in the table of Resolution **740** (and the associated threshold levels for consultation), for the purpose of making appropriate additions from this table to the existing tables in Resolution **739**. Any other proposals for modifications to Resolution **739** would be contrary to the intent and outside the scope of this agenda item.

Next meeting
The next meeting of CITEL PCC II is scheduled for 6-9 December 2004, in Buenos Aires, Argentina.